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# The Lighting of Public Buildings

# THE LIGHTING OF PUBLIC BUILDINGS



Albright Art Gallery, Buffalo, N. Y., Lighted by Nernst Lamps

# The Lighting of Public Buildings



N planning the artificial illumination of a building we cannot do better than to take Nature as a guide. Through ages of evolution the human eye has grown accustomed to light as provided by the sun, and if we strive to obtain daylight values in our artificial illumination we will be working towards those conditions which best suit that organ.

Light and the Human Eye

A consideration of the altitude of the sun during the period of its greatest efficiency and of the consequent absence of bright lights in our field of vision, leaves no doubt as to the proper direction for artificial illumination. As this great luminary approaches the horizon and comes within our natural field of vision, his rays are greatly tempered by the earth's atmosphere, acting as a diffusing screen, so that a glance at the "setting sun" is unlikely to cause serious eye strain. At the same time, the lengthy shadows of morning and evening are evidence that the sun is in a poor position at those times to act as an illuminant. Consequently, we should eschew bracket lighting and adopt an overhead system of illumination in so far as is practicable. Should bracket lighting be resorted to, in order to get certain architectural or ornamental effects, the intrinsic brilliancy of the light source must be reduced to a safe value by the use of a diffusing light screen, such as a dense opal globe. It should be borne in mind, however, that the general illumination of an interior can be best and most efficiently obtained by placing the source of light overhead at a good elevation. Since the greatest amount of the light is needed in a downward direction, it is evident that a lamp which throws the most of its light out horizontally must be fitted with some special reflector to deflect the light downwards. The Nernst electric lamp, however—one of the latest forms of artificial illuminants—has a natural downward distribution of light without the use of reflectors, which especially

Why the Source Should be Overhead

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adapts it to interior lighting. Just enough light is thrown upward to softly illuminate the ceiling above without a suggestion of shadow.

In the lighting of large buildings, the question of color or quality of the artificial light concerns us from the standpoints of both utility and artistic effect. Eye specialists tell us that a light having a preponderance of red rays is bad for the eyesight under working conditions, such as prevail in the business office or clerical department. Under a white light the printed page stands out clear and distinct; while with a reddish light the white background, on which the black letters or figures are imprinted, assumes a reddish tinge, which greatly lessens the contrast between what should be "black and white." So that, for protracted and close visual work, a light approaching daylight in quality is desirable.

The Question of Quality

Again, in large interiors of ornate character, we are interested in a light of natural quality which will bring out the correct color values of the decorative work on walls and ceilings. On the other hand, in consideration of the public's natural dislike to light of a cold, cheerless character, such as naked arc light, we must effect a compromise and use a white light which is tempered with some warmth; in fact, a light of sunlight quality is the real *desideratum*.

The Real Desideratum

In the Nernst light, we have a happy medium between the reddish yellow light of the incandescent



Corridor Lighted by Nernst Lamps

and the cold, bluish light of the arc. It is a light which comes very near being artificial sunlight and, at the same time, is admirably adapted to both utilitarian and artistic purposes.

In addition to its advantages in light distribution and quality, there is the high efficiency or economy which is characteristic of the Nernst lamp. It is this feature which naturally appeals most forcibly to the general public. Compared with the ordinary incandescent lamp, the Nernst lamp gives about twice the amount of useful light for the same current. The cost of maintenance is also considerably less than that of incandescents for the same amount of light. These two features combine towards a saving in the yearly lighting expense, sufficient to justify its extended use in practically every class of lighting.

The Economy of the Nernst Lamp

Where general illumination is desired, the arrangement of lamps should be such as to give a uniform distribution of light and sufficient diffusion to break up shadows. This usually forbids the use of a single large lamp or cluster of lamps in the center of a room and demands that a sufficient number of smaller units or clusters be employed; hence, the existing demand for a unit of light intermediate in power between the arc and incandescent lamps. The Nernst lamp is available in six different sizes, the candle powers of which range from that of the ordinary incandescent lamp to that of the arc lamp. These units, increasing in size

An Intermediate Unit



Corridor Lighted by Nernst Lamps

with candle power, are all of neat appearance and well adapted to almost any type of fixture, be it ceiling fixture, chandelier or bracket; so that the æsthetic ideas of the architect, as well as the economical aims of the engineer, may be satisfied. It will be readily appreciated that with the various units to suit both large and small interiors, greater flexibility and simplicity will result than if either a large or a small unit were to be used throughout.

Flexibility of Nernst Units

The incandescent system is one of small units, while the arc system is one of large units; yet, a combination of the two results in an objectionable mixture of lights of quite different color. This point is worthy of careful consideration by the architect.

Concrete Problems in Illumination

Aside from the characteristics of the light source itself, an illumination, to be effective, must be designed with due regard to the special conditions involved. A good church illumination, for example, would not meet the lighting requirements of a draughting office. It is the purpose of this pamphlet to consider briefly a few concrete problems in illumination.



Nernst Lamp with Ornamental Ceiling Fixture

# Railway Depots

This case, embracing as it does both interior and exterior lighting, is one of varied requirements, and demands attention to the æsthetic as well as the utilitarian side of illumination. The main waiting room of the modern depot, because of its public character, usually receives the lion's share of attention in the matter of architecture, furnishing and fittings, and of late there is a noticeable tendency among architects to displace ordinary methods of illumination with something novel and striking.

The Main Waiting Room



East Liberty Station, Pennsylvania Railroad, Pittsburg, Pa.
Lighted by Nernst Lamps

Evidence of this is seen in the adoption of indirect lighting systems, of which the light source is concealed from view, the light being projected on the ceiling or other reflecting surface. Skylight illumination, another form of indirect lighting, while in use to a very limited extent, may occasionally be used to advantage. This method, however, is only practicable where a double skylight with an intervening attic space is provided; the lamps being suspended over the inner skylight.

Indirect Lighting Systems

While the illumination in the main waiting room must be ample for rather fine reading purposes, yet it should be of the general rather than local form, such as might be used in a library. A good general illumination, making it possible to

General Illumination

read fine print with ease in any part of the room, will also illuminate the architectural features of the walls and ceiling so as to dispel that gloomy effect in the upper space which results when the main source of light is placed low.

As the Nernst lamp is especially adapted to downward lighting, good results will be obtained by arranging the larger types of Nernst lamps in circular or panel formation on the ceiling, or grouping them on massive chandeliers, a sufficient number of the latter being used to gain an even distribution of



Union Station, Pittsburg, Pennsylvania
Lighted by Nernst Lamps

light. The proper diffusion will be obtained through the use of opal, holophane or crystal beaded globes.

When the ceilings are unusually high, say 40 feet and upwards, it will frequently be found advantageous to employ a combination system of ceiling and bracket lights; the former being used principally to illuminate the upper walls and ceiling.

The Combination System

The rather low degree of floor illumination from the ceiling lights may then be built up to the required amount by placing lamps on large ornamental brackets at a height of from 15 to 20 feet from the floor, globes of the proper density being used

to reduce the intrinsic brilliancy of the light source to a safe value.

Aside from the lighting itself, the question of lamp renewals merits special attention in the waiting rooms and other parts of the building which are devoted to the public. Where the ceiling lights are at an elevation of 25 feet or more, they should be installed so as to be accessible from the attic space or next floor above, for repairs. When chandeliers are used, a windlass arrangement should be provided so that these

Lamp Renewals



Main Waiting Room, Union Station, Pittsburg, Pa.
Lighted by Nernst Lamps, located above skylight

may be lowered to the floor below. In this way the necessity of using large, unwieldy ladders, which might cause annoyance, if not serious accidents, to the public, will be avoided.

In the public lobbies or vestibules, a system similar to that used in the adjoining waiting room should be employed, preserving, of course, the proper proportions in lamps and fixtures to suit the smaller space dimensions. The intensity of illumination here, however, need not be more than two-thirds of that in the general waiting room.

Public Lobbies

In most cases, some localized light will be necessary in

Ticket Offices

the ticket offices, to strongly light the ticket racks and the ticket window counters. This should be furnished by low power Nernst lamps mounted on short brackets over the racks and on both sides of the window grating, the light being shielded by dark green glass or opaque shades. A fair amount of general illumination in the office should also be provided by the use of two or more ceiling lights.

As the upper floors of the modern depot are devoted almost entirely to general office work, this part of the problem will be discussed later on under "Office Building" Lighting.



Ticket Lobby, East Liberty Station, Pennsylvania Railroad, Pittsburg
Lighted by Nernst Lamps

The Baggage Room

The requirements in the baggage room will usually be a well distributed illumination of moderate intensity so that baggage checks may be easily read in any part of the room. Nernst lamps of the intermediate size, fitted with opalescent globes and suspended 12 feet from the floor, allowing about 400 square feet per three-glower lamp, will give good results. Where stacks for hand baggage are used, the smaller type (one-glower) lamps, suspended 10 feet high between stacks, and 10 to 15 feet apart, will be necessary.

The concourse, which usually receives a subdued daylight illumination through an overhead skylight during the day, should be supplied with sufficient artificial light at night for coarse reading purposes, and to enable one to readily recognize incoming friends at some distance. Six-glower Nernst lamps, equipped with opalescent globes and suspended below the skylight at a height of 18 feet, allowing about 900 square feet to the lamp, will be adequate for the purpose. The Concourse

For the train platforms, which rarely exceed 15 feet in breadth, a unit of medium size with a downward light distribution is necessary. These requirements are embodied in the three-glower Nernst lamps, which in this case should be hung 13 feet high; the lamps being spaced 30 feet apart in a row, over the center of the platform. Train Platforms



Ticket Office, Union Station, Pittsburg
Lighted by Nernst Lamps

An artistic and good lighting effect for the external approaches to the depot will be obtained by using two three-glower lamps on 18-foot ornamental iron posts; opalescent glassware being used for all outside work. External Approaches

# Hotels

In the public parts of the hotel, such as the lobbies, dining room, buffet, parlors, writing rooms, billiard room and corridors, where artificial illumination is used continuously, the Nernst lamp, with its recognized advantages, becomes a valuable agent. With it the most economical and artistic effects, so necessary in the hotel, are readily attained.

On the other hand, the lighting of bedrooms, private baths and closets is of a private nature and requires the use of an illuminant, such as the incandescent lamp, which comes on immediately when the switch is closed. The general illumination of the bedroom of ordinary size may be satisfactorily done by a ceiling cluster of three or four 16-c. p. incandescents, fitted with standard pagoda shades, and a good light on the dresser for toilet purposes will be furnished by two 8-c. p. lamps enclosed by prismatic glass globes and mounted on wall brackets, one on each side of the dresser. In addition to this, an extra wall outlet for a portable reading light will be found convenient.

Bed Rooms

The lobby, from which the guest usually receives his first impression of the hotel equipment in general, should receive especial attention, the object being to get a brilliant effect with entire absence of glare or harshness—a strong yet softened illumination which will enable one to read the finest print with ease in any part of the room. With the exception of one or two shaded lamps in the cashier's booth, the most effective yet simple method for the lobby, with ceiling heights not exceeding 16 feet, will be to use four- or six-glower lamps mounted on the ceiling in suitable canopies, using a diffusing globe of the holophane or opalescent type. For high ceilings, the illumination furnished in the above manner may be reinforced by one-glower bracket lights on columns and walls, where settees are likely to be placed.

The Lobby

In the dining room or cafe, it should be the aim to get a soft, warm, artistic effect rather than brilliancy, economy here being a secondary consideration. As a foundation, we should first provide a comparatively low degree of illumination, well diffused by means of a moderate number of ceiling or pendant lights. The latter should not be used, however, unless the ceiling is over 14 feet high. If the ceiling method is used, the Nernst lamps may either be installed in ornamental

The Dining Room



Farmers Building Restaurant, Pittsburg, Pa.
Lighted by Nernst Lamps

canopies with pendant globes, or above glass bowls with suitable frames attached directly to the ceiling, giving what is known as the "bulls-eye" effect. In any case, the glassware should be of the diffusing type, so as to soften the light. Additional illumination on the tables may now be furnished by individual table lights in the form of shaded candelabra, using 8-c. p. incandescent lamps. In these rooms and in the parlors and other interiors of a like character, the utilitarian side of the

Table Lights

problem is comparatively simple, and it is the æsthetic considerations which tax most the skill of the designer, and his plans will be governed, to a great extent, by the style of architecture and decorative finish.

The Parlors

The illumination of the parlors need only be of medium and fairly even intensity, and satisfactory results will usually be obtained by grouping the lights on two or more ceiling fixtures of ornate and tasteful design. By keeping the lamps at a fairly good height and using suitable glassware, the objectionable glare of low-hanging, bare lights will be avoided.

The Buffet

While only a moderate degree of illumination is necessary in the buffet, yet the amount of light provided here is largely a question of individual taste, some preferring an almost gloomy effect, while others aim at brilliancy, to harmonize with the style of furnishings employed. A brilliant effect will be imparted by mounting high power Nernst lamps in large crystal or beaded glass globes, suspended from the ceiling by chains or other suitable supports. For a subdued, quiet tone, this same type of fixture may be used by merely substituting a warmly tinted opal glass. In addition to the lights suspended from the ceiling for general illumination, the use of two or three bracket lights over the buffet may prove both useful and ornamental.

The Billiard Room

In the billiard room we meet specific requirements which involve a combination of general and local lighting. The billiard expert generally demands a fairly strong, well-diffused and even illumination on the table; the source of light being so situated that his eyes are afforded the best working conditions. For the table lighting the single glower Nernst lamp is most applicable, two of these being suspended on a drop fixture with a rather wide mouthed cone reflector over each lamp. These reflectors, which may be slightly translucent, should have sufficient depth to conceal the source of light when the lower edge of the shade is 30 inches above the table. With

the exception of one or two bracket lamps at the cashier's desk, the general illumination of this interior will be furnished by a few of the higher power Nernst lamps tastefully mounted near the ceiling. These, as well as the table lamps, should have rather dense diffusing globes. A three-glower lamp with such a globe will light a floor space of 300 square feet, assuming ordinary ceiling heights.

Writing Rooms

The writing rooms will also require both general and local lighting, especially where the desks are placed with backs to the wall. The treatment prescribed for offices will apply here as well; incandescent lamps being used for desk lights and Nernst lamps for general illumination.

Upper Floor Corridors

It should be remembered in connection with the lighting of the upper floor corridors that a bright light shining in through the transom of the bedroom door is very annoying to the guest, after he has extinguished his light for the night. Where one has to do with clear glass transoms, therefore, the ceiling method of lighting is usually debarred, and bracket lighting must be resorted to. For this purpose the single-glower Nernst lamp fitted with a dense opal or, preferably, a special holophane globe, will give good results. These lamps should be mounted on suitable brackets 7 feet from the floor; alternate lamps being placed on the opposite wall. It may be remarked here that by having transoms of translucent glass, the more efficient method of ceiling lighting could be used.

The Main Corridors

The main corridors on the lower floors should have a good illumination in contrast with the upper floor hallways, and the three-glower, or intermediate type of Nernst lamps are best adapted for this purpose. These lamps may be mounted in pendant spheres or directly on the ceiling in neat canopies.

# Public Office Buildings

In public office buildings, the lobbies and public rooms should receive treatment similar to the corresponding rooms in hotels. In the lighting of working offices we would emphasize one point which is not usually conceded by the architect; viz: the unfitness of bracket lights for this particular purpose. Their location usually makes them ineffective for either general or local illumination, and being directly in the

The Unfitness of Bracket Lights



Council Chamber, Detroit City Hall
Lighted by Nernst Lamps

line of vision, they are frequently more of a hindrance than otherwise in visual work. When local illumination is necessary, a shaded incandescent lamp mounted on the desk and to the left of the worker will prove more effective and economical. In a general office of light finish and fair dimensions, whose floor area is, for example, 40 by 60 feet, and where flat-top tables and desks predominate, superior results will be obtained with a system of general illumination entirely. Such a system would involve the use of medium sized units,

General Illumination

fitted with diffusing globes and mounted directly on the ceiling of ordinary height; a sufficient number of units being used to break up all shadows. Selecting the three-glower lamp with its high efficiency and natural downward distribution of light, as an especially desirable unit for this purpose, one of these lamps should be allowed for every 200 square feet of floor area.

A Desirable Office Unit

In the small office, however, with roll top desks, placed back-to-wall around the sides of the room, the above treatment



Engineering Office Lighted by Nernst Lamps

is not always applicable, and individual desk lights will often be found necessary, unless the desks can be placed in such a position with respect to both the natural and artificial light sources, that the worker will never be handicapped by his own shadow. With desk lights properly located and shielded, a moderate general illumination should also be provided by one or two Nernst lights at the ceiling, allowing 300 square feet of floor surface for three-glowers, and 400 square feet per four-glower lamp. This general illumination will be sufficient for ordinary work in any part of the room.

The Small Office

The Drafting Room

While the draughting room is to be classed as an office, yet somewhat different treatment than that outlined above will be required. Theoretically, one might be led to believe that a system of general illumination is the ideal for this purpose, yet actual experience indicates that, with a reasonable expenditure of energy, such a method is impracticable. The draughtsman, as he bends over his work, requires the light to shine in under him rather than down upon him, and will usually welcome a system of individual lights in preference to an overhead system. In this particular case we are more than usually justified in respecting the wishes of the layman. The one-glower Nernst unit, fitted with a dense opal globe and a porcelain lined reflector which shields the eye, is recommended as an excellent unit for this purpose. A trolley support for this lamp, with a track running parallel to and over the upper edge of the drawing board, will constitute a useful adjunct, permitting the draughtsman to change the position of the light at will. Superimposed upon this localized lighting, a relatively low general illumination for coarse reading purposes and to prevent a gloomy effect, may be furnished by three- or four-glower Nernst lamps placed at the ceiling.

The Individual Lighting System

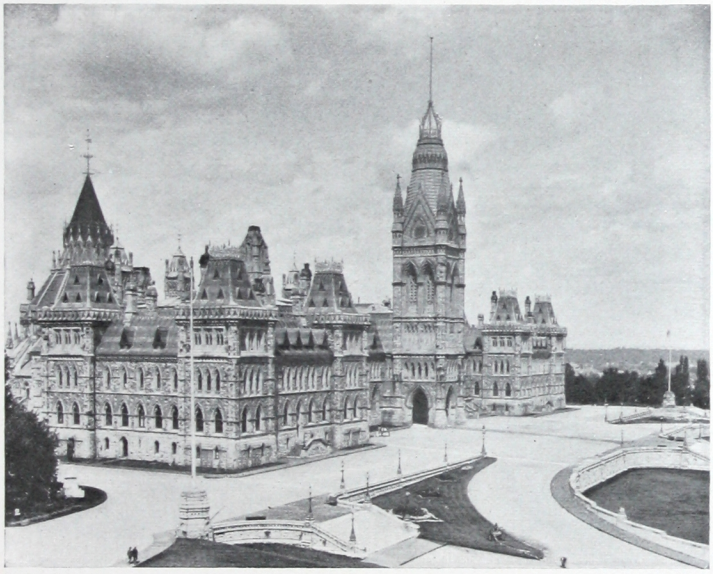


Ornamental Fixture used in Detroit City Hall

## Government Buildings

Under this heading we may include the City Hall, Court House, Post Office, Armory, etc., although each of these cases has specific requirements and demands different treatment. In brief, it may be said that, with the exception of the large interiors involved here, such as the public assembly room of the Municipal Building and drill hall of the Armory, each of the

Specific Requirements



Parliament Building, Ottawa, Canada
Nernst Lamps Installed

above cases will largely be covered by the foregoing discussion under "Office Building" Lighting; especially the City Hall, Court House and Post Office, whose upper floors are largely devoted to office work.

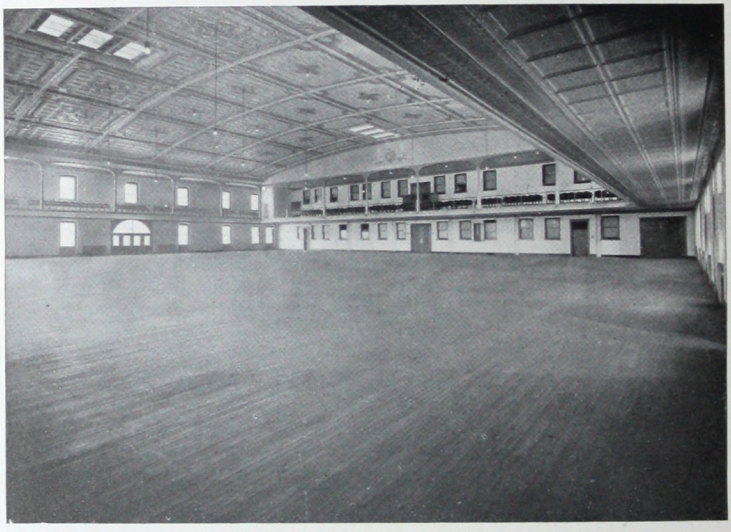
The demand for a large and efficient unit, which will give a steady light of pleasing quality for the general illumination of large areas, such as public assembly rooms and drill halls, is admirably met by the six-glower Nernst

Large Areas

lamp. Owing to its ideal downward distribution of light, this unit, fitted with a diffusing globe, may be suspended 20 feet or more above the floor, so that the lower space is kept clear of unsightly long pendants and blinding points of light.

Post Office Distributing Rooms

In the past, the accepted method of lighting the distributing room of the Post Office, with its numerous mail racks and cut-up floor area, has been to use a system of local illumination, with incandescent bracket lamps mounted directly



Armory, St. Paul, Minnesota
Lighted by Nernst Lamps

on the various racks; a very scant, if any, general illumination being provided to break the gloom.

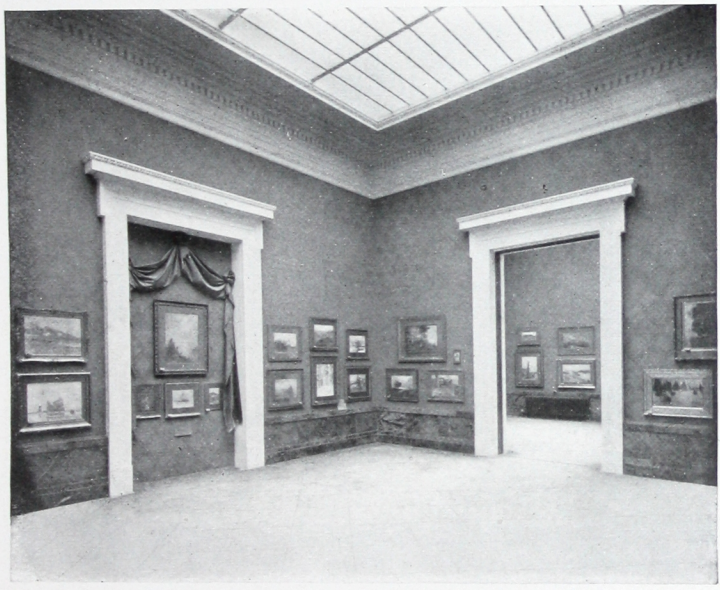
Superior Results

Such a system is, in our opinion, far from the ideal, and we have recently demonstrated that superior results may be obtained by the use of Nernst lamps, properly equipped and installed overhead, so as to give a uniform general illumination.

# Art Galleries and Museums

In no other branch of lighting is the quality or color of the artificial light provided of greater importance than it is in art gallery illumination. The well known effect of differently tinted lights on colors is especially noticeable in the art gallery, and is ample evidence that the illuminants provided here must, above all, be qualified to bring out the natural color effects in the paintings.

Importance of Quality of the Light



One of the Picture Rooms of the Albright Art Gallery, Buffalo, N. Y.
Lighted by Nernst Lamps Located Above Skylight

The natural sunlight quality of the Nernst light alone, not to speak of its efficiency, has served to place this lamp foremost in this particular field. There is just enough warmth in this light to give a rich tone to the exhibit, without altering the relative color values.

The accompanying views of the Albright Art Gallery in the city of Buffalo may serve to illustrate the excellent Nernst system by which that building is lighted. This particular installation is unique in the respect that the entire main floor

Albright Art Gallery

receives both its natural and artificial light through skylights. These skylights being double, form an attic space in which are located six-glower Nernst lamps with powerful reflectors, which project the light downward into the room below.

The Skylight System

Where the highest economy is demanded in the gallery for paintings, three-glower Nernst lamps in special individual reflectors suspended from the ceiling will give the most effective results. This method was employed in the Palace

Suspended Reflector System



A Statuary Room of the Albright Art Gallery, Buffalo, N. Y.
Lighted by Nernst Lamps Located Above Skylight

of Fine Arts at the World's Columbian Exposition at St. Louis, the interiors of these buildings being lighted throughout by Nernst lamps.

Lighting Sculptural Exhibits

In lighting sculptural exhibits, it is particularly essential that both daylight and the artificial light provided have the same direction and distribution, so that the resulting high-lights and shadows, which give the proper relief to the sculpture, are the same at all times. For this reason the skylight method of lighting would seem to be ideal for this purpose.

# Public Libraries

In view of the visual work carried on in the public library, it is obvious that a good lighting system constitutes one of the most important parts of the general equipment of the building. In the reading and reference rooms, the choice between a system of purely general illumination furnished by ceiling lamps, and one combining both general and local lighting, will depend

Reading and Reference Rooms



Public Library, Cedar Rapids, Iowa
Lighted by Nernst Lamps

largely on the architecture, ceiling heights and the finish of walls and ceiling. Where the ceilings are high and the interior finish such that walls and ceilings are of small reflecting value, the latter system, involving the use of both ceiling and table lights, is most applicable. With ceilings of ordinary height, and light interior finish, however, the first method would have the preference. General illumination makes it possible to do close reading at any point in the room, and at the same time there is less chance of annoyance by direct light

Consideration of Ceiling Heights

reflections from the pages of a book. In order to get the best illustrative effects, many of the modern books, as well as a majority of the illustrated periodicals, are printed on enameled paper, the highly reflective qualities of which are very trying to the eyes. It is to be hoped that the near future may have in store the discovery of some economical process of illustration that will be as effective upon paper with a dull finish as the half-tone is upon enameled paper; but until then this characteristic of enameled paper must be taken into consider-

Reflective Qualities of Enameled Paper



Carnegie Library, Akron, Ohio
Lighted by Nernst Lamps

ation in planning the illumination of the reading room, and it should be borne in mind that the annoyance caused by it is harder to avoid when the light source is close at hand.

The Stack Room

In the stack room, where the book racks are close together, a small unit of light is required, and the 16-c. p. incandescent lamp is advocated for this purpose. In all open spaces, however, and especially in the reading rooms, the Nernst light, because of its efficiency, distribution and excellent reading qualities, will give superior results.

## Schools and Colleges

Some argue that artificial light in a schoolroom is a useless extravagance, on the ground that the school is only occupied during the daylight hours; and with that idea in mind, they feel justified in providing only the scantest possible illumination, consisting often of a few flickering gas jets.

Schoolroom Light Should be the Best

Those, however, who have given the subject more careful thought, will agree that where circumstances require artificial



Alinda School, Pittsburg, Pa.
Lighted by Nernst Lamps

light in the schoolroom at any time, it should be the best procurable. When a child is left to pore over the fine print often found in text books, under a poor illuminant, he naturally falls into the habit of holding the book so close to the eyes that near-sightedness is an early consequence.

Evil Effects of Inadequate Systems

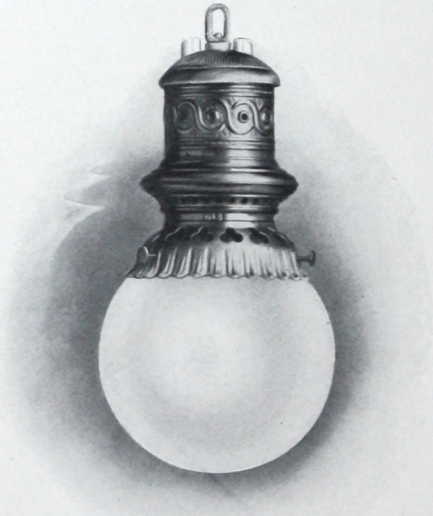
Childhood thoughtlessly accepts such conditions and falls into these habits more readily than the adult, who knows of the effects. It is, therefore, incumbent upon the officials of all

educational institutions to see that the eyesight and the future health of the rising generation is not endangered by an inadequate lighting system in the schoolroom.

How Best Results may be Obtained

The system of general illumination already discussed, using Nernst lamps of the intermediate size, will give excellent results throughout the building, especially if the walls and ceiling are finished in a light tone, as they should be.

Since the purpose of lighting here is entirely utilitarian and not ornamental, a neat unobtrusive ceiling canopy should be used, provided the ceilings are not much over 12 feet in height; otherwise a drop fixture would be advisable.



Six-Glower Nernst Lamp

# Conclusion

In the foregoing passing comment upon the several kinds of lighting mentioned, we do not attempt to formulate any specific rules to cover the points in question. In fact, this would be well nigh impossible, as each individual case demands its own specific treatment. The architect is more and more coming to a realization of the fact that illumination is both an art and a science, and that by supplementing his artistic instincts with the utilitarian ideas of the illuminating engineer, the best interests of his client will be served.

Coöperation on the part of the illumination expert need not be confined to the artificial lighting system alone, as the architect, acting upon his suggestions, can do much in the design of the building toward reducing the necessity for artificial light.

Realizing that the Nernst lamp and its application to general lighting is a comparatively new subject, which many a busy architect has not had the time to investigate, we offer the services of a lighting expert to architects and all others who are looking for an improved lighting system. If you will send in the floor and sectional plans of your building, we will be pleased to submit complete specifications and estimates for the system most suited to your particular case.



Nernst Lamp with Canopy Housing

## NERNST LAMP COMPANY, PITTSBURG, PA.

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CANADIAN WESTINGHOUSE CO., Limited,
Hamilton, Ontario, Manufacturers for Canada.

# Addendum

**The Lighting of the new New York Terminal of the Pennsylvania Railroad System**

As this pamphlet goes to press, the contract for lighting the new New York terminal of the Pennsylvania Railroad system has been awarded to the Nernst Lamp Company. When completed, this will be the largest and finest railway station in the world. An idea of the magnitude of the contract may be gained from the fact that the initial installation in the main building alone will require approximately 13,000 Glower Units.

The greatest care was taken in making the selection of a lighting system, and this contract attests the highly satisfactory results that the Pennsylvania Company has experienced in the use of Nernst Lamps in smaller stations.




August, 1906